LPDES PERMIT NO. LA0003751, AI No. 1607

LPDES FACT SHEET and RATIONALE
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

I. Company/Facility Name: TOTAL Petrochemicals USA Inc.
Cos-Mar Styrene Monomer Plant
P.O. Box 11
Carville, LA 70721

II. Issuing Office: Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services
Post Office Box 4313
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III. Prepared By: Jenniffer Sheppard
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Date Prepared: February 12, 2007

IV. Permit Action/Status:

A. Reason For Permit Action:

Proposed reissuance of an Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46.

* In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401, and 405-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC Chapter 11) will not have dual references.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.4901, 4903, and 2301.F.

B. NPDES permit - NPDES permit effective date: N/A
NPDES permit expiration date: N/A

EPA has not retained enforcement authority.

C. LWDPS permit - LPDES permit effective date: December 21, 2001
LPDES permit expiration date: November 30, 2006

D. Application received on November 29, 2006. Additional information received on January 12, 2007, February 14, 2007, and e-mail correspondence on June 5, 2007..

V. Facility Information:

A. Location - 6325 Louisiana Highway 75, approximately two miles down river from the town of Carville

B. Applicant Activity -

According to the application, TOTAL Petrochemicals USA Inc., Cos-Mar Styrene Monomer Plant, is an organic chemical manufacturing facility that manufactures styrene monomers (SIC Code 2869). Hydrogen gas, Polyethylbenzene residue (PEBR), and toluene are produced as by-products or intermediates resulting from this process and are sold from the facility. The Hydrogen gas is sold to the Air Products facility adjacent to Cos-Mar or used internally as fuel. Toluene, a by-product, and Ethylbenzene, an intermediate in the manufacturing of styrene, are sold and transported from the plant by barge, truck, and rail car. The styrene monomer is sold and transported by the above described means, plus pipeline transfer to the TOTAL Petrochemicals, Polystyrene Plant.

The production of styrene is conducted in two parallel process units; rendering different product qualities. The units are EBIII; Dehydrogenation A and B; and Purification A and B.

C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401, and 405-471 have been adopted by reference at LAC 33:IX.4903)

Guideline	Reference
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414, Subparts D, F, & J

Process Flow - 1.584 MGD

Other sources of technology based limits:
LDEQ Stormwater Guidance, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).
Louisiana Water Quality Management Plan for Sanitary Dischargers.
Best Professional Judgement

D. Fee Rate -
1. Fee Rating Facility Type: Major
2. Complexity Type: VI
3. Wastewater Type: II
4. SIC code: 2869

E. Continuous Facility Effluent Flow - 1.665 MGD.

VI. Receiving Waters: Mississippi River (Outfall 001) and Bayou Braud (Outfall 002)

Bayou Braud (Outfall 002)

1. River Basin: Lake Pontchartrain, Segment No. 040201
2. Designated Uses:
   The designated uses are primary contact recreation, secondary contact recreation, and fish and wildlife propagation.

Mississippi River (Outfall 001)

1. TSS (15%), mg/L: 32.0
2. Average Hardness, mg/L $CaCO_3$: 153.41
3. Critical Flow, cfs: 141,955
4. Mixing Zone Fraction: 0.33
5. Harmonic Mean Flow, cfs: 366,748
6. River Basin: Mississippi River, Segment No. 070301
7. Designated Uses:
   The designated uses are primary contact recreation, secondary contact recreation, fish and wildlife propagation, and drinking water supply.

Information based on the following: Water Quality Management Plan, Volume 5A, 1994; LAC 33:IX Chapter 11;/Recommendation(s) from the Engineering Section. Hardness and 15% TSS data come from monitoring station 0319 on the Mississippi River listed in Hardness and TSS Data for All LDEQ Ambient Stations for the Period of Record as of March 1998, LeBlanc. This information was presented in an e-mail from Brian Baker (LDEQ) to Jenniffer Sheppard (LDEQ) dated February 8, 2007 (See Appendix C).

VII. Outfall Information:

Outfall 001

A. Type of wastewater - the combined continuous discharge of Internal Outfalls 101, 201, and 401.

B. Location - at the point of discharge from the "tap" in the Final Outfall 001 pipeline prior to crossing Louisiana Highway 75 and prior to combining with other waters at Latitude 30°12'58", Longitude 91°04'00".

C. Treatment - No Further Treatment

D. Flow - Continuous Flow 1.665 MGD.

E. Receiving waters - Mississippi River

F. Basin and segment - Mississippi River Basin, Segment 070301

Internal Outfall 101

A. Type of wastewater - the discharge of the underflow stream from the raw river water intake clarification system.

B. Location - at the point of discharge of the underflow from the raw river water intake clarifier prior to entering the common discharge line to Final Outfall 001 containing discharges from Internal Outfalls 201 and 401, at Latitude 30°12'58", Longitude 91°04'00".

C. Treatment - None

D. Flow - Continuous, (Max 30-Day) 0.08064 MGD.

E. Receiving waters - Mississippi River via Final Outfall 001.

F. Basin and segment - Mississippi River Basin, Segment 070301

Internal Outfall 201

A. Type of wastewater - the discharge of treated process wastewaters and process area stormwater, groundwater recovery wastewater, cooling tower blowdown, maintenance wastewater, housekeeping wastewater, water treatment and utility water including sand filter backwash, softener filter backwash, anthracite filter backwash, rinse blowdown, boiler blowdown, deaerator blowdown, waste heat stream generating system blowdown, river water clarifier start-up water, and treated sanitary wastewater from the Cos-Mar facility; treated process wastewater and process area stormwater, and cooling tower blowdown from the adjacent Air Products facility; and wastewaters from Internal Outfall 401.

B. Location - at the point of discharge from the wastewater treatment facility prior to combining with the waters of Internal Outfall 101 and the Mississippi River via Final Outfall 001, at Latitude 30°12'58", Longitude 91°04'00".

C. Treatment - treatment of process wastewaters consists of:
- steam stripping
- pH adjustment
- clarification

Treatment - treatment of utility wastewaters consists of:
- pH adjustment
- clarification

Treatment - treatment of groundwater recovery wastewaters consists of:
- steam stripping
- pH adjustment
- clarification

Treatment - treatment of sanitary wastewaters consists of:
- activated sludge
- disinfection

D. Flow - Continuous Flow 1.57824 MGD.

Process Wastewater*	0.79704 MGD
Utility Wastewater*	0.77544 MGD
Sanitary Wastewater*	0.00576 MGD

* Specific component waste streams are defined at Appendix A-1.

E. Receiving waters - Mississippi River via Final Outfall 001.

F. Basin and segment - Mississippi River Basin, Segment 070301

Internal Outfall 401

A. Type of wastewater - the discharge of the Polystyrene Plant process area wastewater and process area stormwater, cooling tower blowdown, sanitary wastewater, and rail car washwater.

B. Location - at the point of discharge after commingling with the Polystyrene Unit process area wastewater and process area stormwater, cooling tower blowdown, sanitary wastewater, and rail car washwater, prior to entering Cos-Mar's wastewater treatment facility and commingling with the discharges of Internal Outfall 201, and discharging via Final Outfall 001, at Latitude 30°12'58", Longitude 91°04'00".

C. Treatment - treatment of process wastewaters consists of:
- steam stripping
- pH adjustment
- clarification

Treatment - treatment of sanitary wastewaters consists of:
- activated sludge
- disinfection

D. Flow - Continuous, (Max 30-Day) 0.141120 MGD.

E. Receiving waters - Mississippi River via Final Outfall 001.

F. Basin and segment - Mississippi River Basin, Segment 070301.

Outfall 002

A. Type of wastewater - the discharge of non-process area stormwater runoff from non-process areas of the Cos-Mar Styrene Plant, the Carville Polystyrene Plant, and Air Products Facility associated with undeveloped areas, tank farm diked area drainage water, and de minimus industrial activity wastewaters including hydrostatic test water, steam trap condensate, fire system test water, eye wash and safety shower water, uncontaminated clarified water and general facility washwater including, but not limited to wash down water, irrigation water, and dust control activities water.

B. Location - at the point of discharge from the Outfall 002 Weir after the commingling of all contributing streams as identified above and prior to discharge into Bayou Braud at Latitude 30°13'35", Longitude 91°04'00".

C. Treatment - None

D. Flow - Intermittent

E. Receiving waters - Bayou Braud

F. Basin and segment - Lake Pontchartrain Basin, Segment 040201

VIII. Proposed Permit Limits:

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in the Permit Limit Rationale section below.

Summary of Proposed Changes From the Current NPDES Permit:

A. Internal Outfall 201 - the process wastewater flow has increased from 0.78336 MGD to 0.79704 MGD, therefore limitations have also increased in accordance with the requirements in the OCPSF Guidelines at 40 CFR 414.

B. Internal Outfall 201 - the production fractions for Subparts D and F have changed from 0.1924 to 0.23 for Subpart D and from 0.8076 to 0.77 for Subpart F, therefore limitations have been calculated in accordance with these fraction changes and the requirements in the OCPSF Guidelines at 40 CFR 414.

C. Internal Outfall 201 - the monitoring frequency for Hexachlorobenzene has been increased from 1/year to 1/quarter based on current practices for water quality limited parameters.

D. Internal Outfall 301 has been deleted from the proposed permit. This outfall was removed from service and most of the piping demolished.

E. Outfall 002 - monitor and report only requirements have been established at once per quarter for Ammonia (as N), Total Phosphorus, Total Nitrate (as N), and Total Nitrite (as N) based on 303(d) impairments in Subsegment 040201. This information will be used to gather data for future TMDL development.

IX. Permit Limit Rationale:

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII.

1. Outfall 001, 101, 201, and 401 - Process Wastewaters

***Outfall 001** - the combined continuous discharge of Internal Outfalls 101, 201, and 401.

The combined outfall will receive the following monitoring requirements:

PARAMETER	**MONTHLY AVERAGE**	**DAILY MAXIMUM**
Flow, MGD	Report	Report (continuous monitoring)

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

***Internal Outfall 101** - the discharge of the underflow stream from the raw river water intake clarification system.

The clarifier underflow discharges from this outfall will receive the following monitoring requirements:

PARAMETER	**MONTHLY AVERAGE**	**DAILY MAXIMUM**
Flow, MGD	Report	Report (continuous monitoring)
Clarifying Agents(*)	---	Inventory Calculation

(*) No DMR reporting required.

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

***Internal Outfall 201** - the discharge of treated process wastewaters and process area stormwater, groundwater recovery wastewater, cooling tower blowdown, maintenance wastewater, housekeeping wastewater, water treatment and utility water including sand filter backwash, softener filter backwash, anthracite filter backwash, rinse blowdown, boiler blowdown, deaerator blowdown, waste heat stream generating system blowdown, river water clarifier start-up water, and treated sanitary wastewater from the Cos-Mar facility; treated process wastewater and process area stormwater, and cooling tower blowdown from the adjacent Air Products facility; and wastewaters from Internal Outfall 401.

TOTAL Petrochemicals USA Inc., Cos-Mar Styrene Monomer Plant is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

Manufacturing Operation	Guideline
Organic chemical manufacturing	40 CFR 414, Subpart(s) D, F, and J

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
Flow (MGD)	Report	Report (continuous monitoring)
BOD_5	257	684
TSS	588	1904
Total Chromium	6.36	15.87
Zinc, Total	2.62	5.45
Acrylonitrile	0.62	1.54
Benzene	0.38	0.89
Carbon Tetrachloride	0.94	2.53
Chlorobenzene	0.94	2.53
Chloroethane	0.73	1.96
Chloroform	0.74	2.16
1,1-Dichloroethane	0.15	0.39

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
1,2-Dichloroethane	1.20	3.82
1,1-Dichloroethylene	0.15	0.40
1,2-trans-Dichloroethylene	0.17	0.44
1,2-Dichloropropane	1.30	5.28
1,3-Dichloropropylyene	1.30	5.28
Ethylbenzene	0.94	2.53
Methyl Chloride	0.73	1.96
Methylene Chloride	0.24	1.13
Tetrachloroethylene	0.35	1.09
Toluene	0.19	0.49
1,1,1-Trichloroethane	0.15	0.39
1,1,2-Trichloroethane	0.21	0.84
Trichloroethylene	0.17	0.46
Vinyl Chloride	0.64	1.14
2,4-Dimethylphenol	0.13	0.31
4,6-Dinito-o-cresol	0.52	1.84
2,4-Dinitrophenol	8.02	28.52
2-Nitrophenol	0.43	1.54
4-Nitrophenol	1.08	3.83
Phenol	0.13	0.31
Acenaphthene	0.13	0.31
Acenaphthylene	0.13	0.31
Anthracene	0.13	0.31
Benzo (a) anthracene	0.13	0.31
Benzo (a) pyrene	0.13	0.32
3,4-Benzofluoranthene	0.13	0.32

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
Benzo(k)fluoranthene	0.13	0.31
Bis(2-ethylhexyl)phthalate	0.63	1.72
Chrysene	0.13	0.31
1,2-Dichlorobenzene	1.30	5.28
1,3-Dichlorobenzene	0.94	2.53
1,4-Dichlorobenzene	0.94	2.53
Diethyl phthalate	0.31	0.75
Dimethyl phthalate	0.13	0.31
Di-n-butyl phthalate	0.13	0.29
Fluoranthene	0.15	0.36
Fluorene	0.13	0.31
Hexachlorobenzene	0.49**	1.18**
Hexachlorobutadiene	0.94	2.53
Hexachloroethane	1.30	5.28
Naphthalene	0.13	0.31
Nitrobenzene	14.87	42.56
Phenanthrene	0.13	0.31
Pyrene	0.13	0.32
1,2,4-Trichlorobenzene	1.30	5.28

** Water Quality limitations

Calculations and basis of permit limitations are found at Appendix A and associated appendices. See below for site-specific considerations.

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

BOD_5, TSS, Acrylonitrile, Benzene, Carbon Tetrachloride, Chlorobenzene, Chloroethane, Chloroform, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, 1,2-trans-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropylyene, Ethylbenzene, Methyl Chloride, Methylene Chloride,

Tetrachloroethylene, Toluene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, 2,4-Dimethylphenol, 4,6-Dinito-o-cresol, 2,4-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Phenol, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, 3,4-Benzofluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Chrysene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Fluoranthene, Fluorene, Hexachlorobutadiene, Hexachloroethane, Naphthalene, Nitrobenzene, Phenanthrene, Pyrene, and 1,2,4-Trichlorobenzene - Limitations established in accordance with the Organic Chemical Manufacturing Guidelines at 40 CFR Part 414.

Total Chromium - Regulations promulgated at 40 CFR Part 414.101 (b) require effluent limits to be established for metal-bearing waste streams listed at Appendix A of 40 CFR Part 414. Appendix A lists **chromium** for styrene/dehydration of ethylbenzene. The LPDES draft permit includes mass limits for chromium utilizing the chromium-bearing waste stream 30-day maximum average flow of 477 GPM (0.68688 MGD). The sampling location for chromium is after the wastewater treatment facility and prior to combining with any other waters.

Total Zinc -Regulations promulgated at 40 CFR Part 414.101 (b) require effluent limits to be established for metal-bearing waste streams listed at Appendix A of 40 CFR Part 414. Appendix A lists **zinc** for styrene/dehydration of ethylbenzene. The LPDES draft permit includes mass limits for zinc utilizing the zinc-bearing waste stream 30-day maximum average flow of 33.5 GPM (0.04824 MGD) and additional allocations for cooling tower blowdown based on 0.4 mg/L Monthly Average concentration and 457.5 GPM (0.65880 MGD). This value was presented in a letter from Bock (Cos-Mar) to Cadwell (EPA) on August 28, 1989. The 99th percentile was estimated to be 0.8 mg/L Daily Maximum concentration. The sampling location for zinc is after the wastewater treatment facility and prior to combining with any other waters.

***Internal Outfall 401** - the discharge of the Polystyrene Plant process area wastewater and process area stormwater, cooling tower blowdown, sanitary wastewater, and rail car washwater.

The discharges from this outfall will receive the following monitoring requirements:

PARAMETER	**MONTHLY AVERAGE MG/L**	**DAILY MAXIMUM MG/L**
Flow, MGD	Report	Report
Zinc, Total	1.05	2.61
Phenol	Report	Report

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

Total Zinc - Federal Regulations, at 40 CFR Part 414.101 (b), Appendix A, lists **Zinc** for polystyrene (crystal) modified/polystyrene by sulfonation, chloromethylation, and/or amination. Internal Outfall 401 will regulate the concentration of **Zinc** present in the combined wastewater stream from the Polystyrene facility. BPJ effluent limitations originally established in an NPDES permit and current LPDES permit, effective December 1, 2001, regulating zinc using guideline concentrations are maintained in the LPDES draft permit. All other guideline parameters associated with this type waste stream will continue to be monitored at Internal Outfall 201.

Phenol - The monitoring requirement for **Total Phenol** has been retained based on correspondence between Cos-Mar and LDEQ; (Letter dated 12/17/1998 addressed in the current LPDES permit, effective on December 1, 2001.

2. Outfall 002 - Utility Wastewaters & Stormwater Discharges

***Outfall 002** -the discharge of non-process area stormwater runoff from non-process areas of the Cos-Mar Styrene Plant, the Carville Polystyrene Plant, and Air Products Facility associated with undeveloped areas, tank farm diked area drainage water, and de minimus industrial activity wastewaters including hydrostatic test water, steam trap condensate, fire system test water, eye wash and safety shower water, uncontaminated clarified water and general facility washwater including, but not limited to wash down water, irrigation water, and dust control activities water.

Stormwater and Utility wastewaters being discharged to discrete outfalls receive BPJ limitations/monitoring requirements according to the following schedule:

PARAMETER	MONTHLY AVERAGE MG/L	DAILY MAXIMUM MG/L
Flow, MGD	---	Report
TOC	---	50
Oil & Grease	---	15
Benzene	---	353 μg/L
Ethylbenzene	---	1000 μg/L
Toluene	---	195 μg/L
Zinc, Total	---	Report
Total Ammonia (as N)	---	Report
Total Phosphorus	---	Report

PARAMETER	MONTHLY AVERAGE MG/L	DAILY MAXIMUM MG/L
Total Nitrate (as N)	---	Report
Total Nitrite (as N)	---	Report
pH Standard Units	6.0 (min)	10.0 (max)

Site-Specific Consideration(s)

Flow - established in accordance with LAC 33:IX.2707.I.1.b.

pH - this value was retained from the previous permit. This limit was originally established because of the usage of shell and limestone in the areas drained by this outfall.

TOC and Oil & Grease - these limitations were retained from the current LPDES permit, effective on December 1, 2001, and are consistent with current guidance for stormwater discharges.

Benzene, Ethylbenzene, and Toluene - these limitations were retained from the current LPDES permit, effective on December 1, 2001.

Total Zinc - this reporting requirement has been retained from the current LPDES permit, effective on December 1, 2001.

Total Ammonia, Total Phosphorus, Total Nitrate, and Total Nitrite - monitor and report only requirements have been established based on 303(d) impairments in Subsegment 040201. This information will be used to gather data for future TMDL development.

In accordance with LAC 33:IX.2707.I.3 and [40 CFR 122.44(I)(3) and (4)], a Part II condition is proposed for applicability to all storm water discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet flow. The Part II condition requires a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit, along with other requirements. If the permittee maintains other plans that contain duplicative information, those plans could be incorporated by reference to the SWP3. Examples of these type plans include, but are not limited to: Spill Prevention Control and Countermeasures Plan (SPCC), Best Management Plan (BMP), Response Plans, etc. The conditions will be found in the draft permit. Including Best Management Practice (BMP) controls in the form of a SWP3 is consistent with other LPDES and EPA permits regulating similar discharges of stormwater associated with industrial activity, as defined in LAC 33:IX.2522.B.14 [40 CFR 122.26(b)(14)].

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations and/or specific analytical results from the permittee's application were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. Calculations, results, and documentation are given in Appendix B.

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation are given in Appendix B.

The following pollutants received water quality based effluent limits:

PARAMETER(S)
Hexachlorobenzene

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They are also listed in Part II of the permit.

Site-Specific Consideration(s)

***Internal Outfall 201** - the discharge of treated process wastewaters and process area stormwater, groundwater recovery wastewater, cooling tower blowdown, maintenance wastewater, housekeeping wastewater, water treatment and utility water including sand filter backwash, softener filter backwash, anthracite filter backwash, rinse blowdown, boiler blowdown, deaerator blowdown, waste heat stream generating system blowdown, river water clarifier start-up water, and treated sanitary wastewater from the Cos-Mar facility; treated process wastewater and process area stormwater, and cooling tower blowdown from the adjacent Air Products facility; and wastewaters from Internal Outfall 401.

PARAMETER	MONTHLY AVERAGE (lbs/day)	DAILY MAXIMUM (lbs/day)
Hexachlorobenzene	0.49	1.18

Hexachlorobenzene - application of these water quality based effluent limitations at Internal Outfall 201 has been retained from the current LPDES permit, effective on December 1, 2001. It has been deemed appropriate to apply these limitations in this manner since hexachlorobenzene is already a regulated OCPSF parameter at Internal Outfall 201. It should be noted that the types of discharges permitted at Internal Outfalls 101 and 401 are not reasonably expected to contribute to the loading at Final Outfall 001.

TMDL Waterbodies

Outfall 001

The discharges from outfall 001 include combined wastewaters from Internal Outfalls 101, 201 and 401 including process wastewater and process area stormwater; water treatment and utility water including sand filter, softener and anthracite filter backwash, and rinse, boiler, and deareator blowdown, waste heat stream generating system blowdown, river water, and clarifier wastewater are to the Mississippi River, Segment No. 070301. The Mississippi River is not listed on the 303(d) report as being impaired. Therefore, no additional requirements have been added to this proposed permit for Outfall 001.

Outfall 002

and discharges from outfall 002 including non-process area stormwater runoff associated with undeveloped areas, tank farm diked area drainage water, and de minimus industrial activity wastewaters including hydrostatic test water, steam trap condensate, fire system test water, eye wash and safety shower water, uncontaminated clarified water and general facility washwater including, but not limited to wash down water, irrigation water, and dust control activities water are to Bayou Braud, Subsegment 040201. Bayou Braud is listed on the 303(d) report as being impaired with Total Ammonia, Phosphorus, Nitrogen, Organic Enrichment/Low Do, Pathogen Indicators, Chlorides, Sulfates, and TDS. A TMDL is scheduled to be completed by March 31, 2011.

Chlorides, Sulfates, and TDS

The 303(d) document states that these impairments are suspected to be caused by site clearance (land development and re-development). Cos-Mar is not currently in the process of site clearance. Also, based on lab analysis submitted in the November 2006 LPDES permit renewal application the values for these parameters are well below the numerical criteria, as listed in LAC 33:IX.1113.C.2. Therefore, it is not reasonably expected that the discharges from this outfall will cause further Chloride, Sulfates, and/or TDS impairments. No additional requirements have been added to Outfall 002 for these impairments.

Pathogen Indicators

Pathogen Indicators is usually associated with sanitary discharges. Since this outfall does not contain sanitary wastewater as a permitted discharge, it is not reasonably expected to cause further Pathogen Indicator impairments. Therefore, no additional requirements have been added to Outfall 002.

Organic Enrichment/Low DO

The Organic Enrichment/Low DO impairment has been addressed through the TOC limitation established at this outfall. The Daily Maximum TOC limitation of 50 mg/L is consistent with current stormwater guidance and considered protective to waters of the state.

Ammonia (as N), Phosphorus, Nitrate, and Nitrite

Monitor and report only requirements have been established at once per quarter for Ammonia (as N), Total Phosphorus, Total Nitrate (as N), and Total Nitrite (as N) based on 303(d) impairments in Subsegment 040201. This information will be used to gather data for future TMDL development.

A reopener clause will be established in the permit to include more stringent limits based on final loading allocations in the completed and approved TMDL.

Monitoring frequencies for water quality based limited parameters are established in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

D. Biomonitoring Requirements

It has been determined that there may be pollutants present in the effluent which may have the potential to cause toxic conditions in the receiving stream. The State of Louisiana has established a narrative criteria which states, "toxic substances shall not be present in quantities that alone or in combination will be toxic to plant or animal life." The Office of Environmental Services requires the use of the most recent EPA biomonitoring protocols.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit for Outfall(s) 001 are as follows:

TOXICITY TESTS	FREQUENCY
Acute static renewal 48-hour definitive toxicity test using Daphnia pulex	1/year
Acute static renewal 48-hour definitive toxicity test using fathead minnow (Pimephales promelas)	1/year

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge in accordance with regulations promulgated at LAC 33:IX.2715/40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit. The permit requires the submission of certain toxicity testing information as an attachment to the Discharge Monitoring Report.

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.3105/40 CFR 124.5. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 0.02%, 0.03%, 0.04%, 0.05%, and 0.07%. The low-flow effluent concentration (critical dilution) is defined as 0.05% effluent.

E. MONITORING FREQUENCIES

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I./40 CFR 122.44(I)]. The following section(s) explain the rationale for the monitoring frequencies stated in the draft permit.

1. Outfall 001, 101, 201, and 401 - Process Wastewaters

***Outfall 001** - the combined continuous discharge of Internal Outfalls 101, 201, and 401.

Flow shall be monitored continuously. This frequency has been retained from the current permit, effective on December 1, 2001.

PARAMETER(S)	MONITORING FREQUENCY
Flow	Continuous

***Internal Outfall 101** - the discharge of the underflow stream from the raw river water intake clarification system.

Flow shall be monitored continuously. This frequency has been retained from the current permit, effective on December 1, 2001.

PARAMETER(S)	MONITORING FREQUENCY
Flow	Continuous

***Internal Outfall 201** - the discharge of treated process wastewaters and process area stormwater, groundwater recovery wastewater, cooling tower blowdown, maintenance wastewater, housekeeping wastewater, water treatment and utility water including sand filter backwash, softener filter backwash, anthracite filter backwash, rinse blowdown, boiler blowdown, deaerator blowdown, waste heat

stream generating system blowdown, river water clarifier start-up water, and treated sanitary wastewater from the Cos-Mar facility; treated process wastewater and process area stormwater, and cooling tower blowdown from the adjacent Air Products facility; and wastewaters from Internal Outfall 401.

Flow and pH shall be monitored continuously. These frequencies have been retained from the current permit, effective on December 1, 2001.

PARAMETER(S)	**MONITORING FREQUENCY**
Flow	Continuous
pH	Continuous

Benzene, Ethylbenzene, and Toluene - A monitoring frequency of 3/week for the following listed toxic pollutants is considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7. These frequencies have been retained from the current permit, effective on December 1, 2001.

PARAMETER(S)	**MONITORING FREQUENCY**
Benzene	3/week
Ethylbenzene	3/week
Toluene	3/week

BOD_5 and TSS - A monitoring frequency of 1/week for these pollutants is considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7. These frequencies have been retained from the current permit, effective on December 1, 2001.

PARAMETER(S)	**MONITORING FREQUENCY**
BOD5	1/week
TSS	1/week

Total Chromium and Total Zinc - Those toxic pollutants being discharged at levels well below the proposed draft permit limits are proposed to be monitored 1/month. These frequencies have been retained from the current permit, effective on December 1, 2001.

PARAMETER(S)	**MONITORING FREQUENCY**
Total Chromium	1/month
Zinc, Total	1/month

Hexachlorobenzene - the monitoring frequency for Hexachlorobenzene has been increased from 1/year to 1/quarter based on current practices for water quality limited parameters.

PARAMETER(S)	MONITORING FREQUENCY
Hexachlorobenzene	1/ quarter

Acrylonitrile, Carbon Tetrachloride, Chlorobenzene, Chloroethane, Chloroform, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, 1,2-trans-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropylene, Methyl Chloride, Methylene Chloride, Tetrachloroethylene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, 2,4-Dimethylphenol, 4,6-Dinitro-o-cresol, 2,4-Dinitrophenol, 2-Nitrophenol, 4-Nitrophenol, Phenol, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, 3,4-Benzofluoranthene, Benzo(k)fluoranthene, Bis(2-ethylhexyl)phthalate, Chrysene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Fluoranthene, Fluorene, Hexachlorobutadiene, Hexachloroethane, Naphthalene, Nitrobenzene, Phenanthrene, Pyrene, and 1,2,4-Trichlorobenzene - Toxic pollutants not expected to be on-site are proposed to be monitored once per year. These frequencies have been retained from the current permit, effective on December 1, 2001.

PARAMETER(S)	MONITORING FREQUENCY
Acrylonitrile	1/ year
Carbon Tetrachloride	1/year
Chlorobenzene	1/year
Chloroethane	1/ year
Chloroform	1/year
1,1-Dichloroethane	1/ year
1,2-Dichloroethane	1/ year
1,1-Dichloroethylene	1/ year
1,2-trans-Dichloroethylene	1/ year
1,2-Dichloropropane	1/year
1,3-Dichloropropylene	1/year
Methyl Chloride	1/ year
Methylene Chloride	1/ year

PARAMETER(S)	**MONITORING FREQUENCY**
Tetrachloroethylene	1/ year
1,1,1-Trichloroethane	1/ year
1,1,2-Trichloroethane	1/ year
Trichloroethylene	1/ year
Vinyl Chloride	1/ year
2,4-Dimethylphenol	1/ year
4,6-Dinitro-o-cresol	1/ year
2,4-Dinitrophenol	1/ year
2-Nitrophenol	1/ year
4-Nitrophenol	1/ year
Phenol	1/ year
Acenaphthene	1/ year
Acenaphthylene	1/ year
Anthracene	1/ year
Benzo (a) anthracene	1/ year
Benzo (a) pyrene	1/ year
3,4-Benzofluoranthene	1/ year
Benzo(k)fluoranthene	1/ year
Bis(2-ethylhexyl)phthalate	1/ year
Chrysene	1/ year
1,2-Dichlorobenzene	1/ year
1,3-Dichlorobenzene	1/ year
1,4-Dichlorobenzene	1/ year
Diethyl phthalate	1/ year
Dimethyl phthalate	1/ year
Di-n-butyl phthalate	1/ year
Fluoranthene	1/ year

PARAMETER(S)	MONITORING FREQUENCY
Fluorene	1/ year
Hexachlorobutadiene	1/ year
Hexachloroethane	1/ year
Naphthalene	1/ year
Nitrobenzene	1/ year
Phenanthrene	1/ year
Pyrene	1/ year
1,2,4-Trichlorobenzene	1/ year

***Internal Outfall 401** - the discharge of the Polystyrene Plant process area wastewater and process area stormwater, cooling tower blowdown, sanitary wastewater, and rail car washwater.

Flow, Total Zinc, and Phenol - These parameters are proposed to be monitored 1/month. These frequencies have been retained from the current permit, effective on December 1, 2001.

PARAMETER(S)	MONITORING FREQUENCY
Flow	1/month
Zinc, Total	1/month
Phenol	1/month

2. Outfall 002 - Utility Wastewaters & Stormwater Discharges

***Outfall 002** - the discharge of non-process area stormwater runoff from non-process areas of the Cos-Mar Styrene Plant, the Carville Polystyrene Plant, and Air Products Facility associated with undeveloped areas, tank farm diked area drainage water, and de minimus industrial activity wastewaters including hydrostatic test water, steam trap condensate, fire system test water, eye wash and safety shower water, uncontaminated clarified water and general facility washwater including, but not limited to wash down water, irrigation water, and dust control activities water.

Utility wastewater and stormwater pollutants being discharged to discrete outfalls shall receive monitoring frequencies according to the following schedule:

Flow, TOC, Oil & Grease, Benzene, Ethylbenzene, Toluene, Total Zinc, and pH - These parameters are proposed to be monitored 1/month. These frequencies have been retained from the current permit, effective on December 1, 2001.

PARAMETER(S)	MONITORING FREQUENCY
Flow	1/month
TOC	1/month
Oil & Grease	1/month
Benzene	1/month
Ethylbenzene	1/month
Toluene	1/month
Zinc, Total	1/month
pH	1/month

Total Ammonia, Total Phosphorus, Total Nitrate (as N), and Total Nitrite (as N) - established 1/quarter in order to collect data for future TMDL development based on BPJ.

PARAMETER(S)	MONITORING FREQUENCY
Ammonia, Total	1/quarter
Phosphorus, Total	1/quarter
Nitrate, Total (as N)	1/quarter
Nitrite, Total (as N)	1/quarter

X. Compliance History/DMR Review:

A compliance history/DMR review was done covering the period of January 2005 to March 2007.

A. DMR Excursions Reported

DATE	PARAMETER	OUTFALL	REPORTED VALUE	PERMIT LIMITS
07/30/05	pH (Rage Excursion), > 60	201	1 excursion greater than 60 minutes	0
09/30/05	Toluene (*)	201	24.1 lbs/day, monthly avg	0.18 lbs/day, monthly avg
			294.1 lbs/day, daily max	0.48 lbs/day, daily max
09/30/05	Benzene (*)	201	296.3 lbs/day, monthly avg	0.37 lbs/day, monthly avg
			3299.1 lbs/day, daily max	0.88 lbs/day, daily max
09/30/05	Ethylbenzene (*)	201	15.4 lbs/day, monthly avg	0.93 lbs/day, monthly avg
			189.9 lbs/day, daily max	2.48 lbs/day, daily max
12/31/05	Benzene	002	527 ug/L, daily max	353 ug/L, daily max
03/31/06	Zinc, Total	401	2.92 mg/L, daily max	2.61 mg/L daily max

(*) These excursions occurred due to Hurricane Rita. Cos-Mar uses natural gas to operate the pollution control equipment. During this time, Cos-Mar's supplier was prohibited from giving even a limited amount of natural gas for industrial use because they were required to supply the limited natural gas available to essential services and public needs. This was addressed in a letter from Total Petrochemicals to LDEQ, dated September 28, 2005.

B. Inspections

A facility inspection was conducted on December 29, 2004. There were no areas of concern.

A facility inspection was conducted on December 28, 2005. The following items were noted in the inspection report:

1. DMRs were reviewed and pH excursion was noted.
2. Hurricane Rita incident was noted.
3. An incident occurred on December 25 that resulted in a low level feedwater with hydrocarbons being released due to a power failure. This flowed to a ditch which was then blocked off in sections but a leak was discovered and was in process of being contained at the time of inspection.

XI. "IT" Questions

The TOTAL Petrochemicals USA Inc., Cos-Mar Styrene Monomer Plant is not a new major facility and does not include a significant modification, therefore, IT Questions were not required to be addressed.

XII. Endangered Species:

The receiving waterbody, Subsegment 070301 of the Mississippi River Basin, has been identified by the U.S. Fish and Wildlife Service (FWS) as habitat for the Pallid Sturgeon, which are listed as an endangered species. This draft permit has been submitted to the FWS for review in accordance with a letter dated 9/29/06 from Watson (FWS) to Brown (LDEQ). As set forth in the Memorandum of Understanding between the LDEQ and the FWS, and after consultation with FWS, LDEQ has determined that the issuance of the LPDES permit is not likely to have an adverse effect upon the Pallid Sturgeon. Effluent limitations are established in the permit to ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat. The more stringent of technology and water quality based limits (as applicable) have been applied to ensure maximum protection of the receiving water.

XIII. Historic Sites:

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

XIV. Tentative Determination:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to permit for the discharge described in the application.

XV. Variances:

No requests for variances have been received by this Office.

XVI. Public Notices:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

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